

## REMARKS

In the Office Action, the Examiner rejected claims 1-6, and withdrew claims 7-11 and 18-22 from consideration. While Applicant does not necessarily agree with the Examiner's reasons for restriction, Applicant hereby acknowledges the constructive election of claims 1-6 and withdrawal of claim 7-11 and 18-22 from consideration pursuant to 37 C.F.R. § 1.142(b) and M.P.E.P § 821.03. In view of the following remarks, Applicant respectfully requests reconsideration and allowance of all pending claims.

### **Claim Rejections under 35 U.S.C. § 103(a)**

The Examiner rejected claims 1-6 under 35 U.S.C. § 103(a) as obvious over Rohlfing et al. (U.S. Patent No. 3,244,681). Applicant respectfully traverses this rejection.

### ***Legal Precedent***

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). To establish a *prima facie* case, the Examiner must show that the combination or modified reference includes all of the claimed elements, *and* also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the reference(s). *See Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Further, the Supreme Court has recently stated that the obviousness

analysis should be explicit. *See KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350, page 14 (U.S., decided April 30, 2007). “[R]ejections based on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See id.* (quoting *In re Kahn*, 441 F.3d 977,988 (Fed. Cir. 2006)).

### ***Independent Claim 1***

The Examiner acknowledged that the cited reference does not disclose “a root mean square surface roughness less than about 120 micro inches,” as recited in claim 1. *See* Office Action Mailed July 10, 2006, page 4. Nevertheless, the Examiner incorrectly asserted that because Rohlring discloses a tubular closed loop reaction zone having smooth surfaces, it would have been obvious to one of ordinary skill in the art to polish the inner surface of the Rohlring loop reactor to a root mean square surface roughness less than about 120 micro inches. *See id.* at 5.

The Examiner contended that “although [Rohlring] may not use the same units for measuring smoothness or roughness, applicants must recognize that the recited ‘root mean square surface roughness’ is merely a functional language for gauging roughness or smoothness that does not lend itself to patentability.” *See* Office Action Mailed July 10, 2006, page 4. First, Applicant notes that the cited reference employs no units for smoothness or roughness, but merely states that the surface of the Rohlring reactor is smooth. *See* Rohlring, col. 1, lines 60-65. Such a nonspecific statement in Rohlring does

not teach or suggest the finish of a surface having a roughness less than about 120 micro inches, as claimed.

Further, as indicated in the present specification, Applicant believes that the walls of loop reactors (such as the Rohlfing reactor) in the prior art possess a roughness greater than 125 micro inches. See Application, page 7, ¶ 28 (“Known slurry loop reactors have root mean square surface roughness values of 125 or greater (in units of micro inches). The root mean square surface roughness of the slurry loop reactor of the present invention is less than 125 micro inches . . .”). In fact, Applicant believes that the roughness of the Rohlfing is well above 125 micro inches (far outside of the claimed range) when considering the age of the reference.

Second, Applicant again traverses the Examiner’s contention that the presently-recited unit of roughness is merely functional language not lending itself to patentability. After all, a degree of smoothness (which may be expressed in units of roughness as is typical in the pertinent art) of a surface of the polymerization reactor is plainly patentable. The present application discloses and claims specific processes for conducting polymerizations in reactors having a maximum surface roughness, and also generating and maintaining such a maximum surface roughness. See, e.g., Application, pages 4-5, ¶¶ 19-21.

In conclusion, while the Rohlfing reference mentions “a tubular closed loop reaction zone having smooth surfaces,” the cited reference is absolutely devoid of the teaching or suggestion of a loop reactor surface having a *root mean square surface roughness less than about 120 micro inches*. See Rohlfing, col. 1, lines 60-65. Furthermore, there is no appropriate reason for such a modification of the Rohlfing reference. For example, there is no indication of operating problems (e.g., fouling, excessive pressure differential, polymer quality problems, etc.) or other needs for a much smoother reactor surfaces. Accordingly, claim 1 and its dependent claims 2-6 are patentable over the cited reference. Therefore, Applicant respectfully requests that the Examiner to withdraw the rejection and allow claims 1-6.

**Conclusion**

Applicant respectfully submits that all pending claims should be in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

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